

AMENDMENTS TO THE CLAIMS

1 (currently amended) A substrate processing apparatus comprising:

a-substrate holding ~~mechanisms~~~~mechanism~~ for holding a substrate, each of said substrate holding mechanisms including

(i) a body having a projection for supporting the substrate, and

(ii) a rotatable pawl having a presser configured to press the substrate from above
with~~under~~ a holding force which is ~~produced~~ due to a centrifugal force caused by rotation of said substrate holding mechanism;

a substrate rotation mechanism for rotating said substrate holding mechanisms, thereby rotating said substrate, and~~mechanism to rotate the substrate held by said substrate holding mechanism; a driving device~~ for changing a rotational speed of said substrate holding mechanisms, thereby changing~~mechanism so as to change~~ the holding force ~~under which the substrate is held by said substrate holding mechanism, said substrate rotation mechanism being configured to increase or decrease a rotational speed of said substrate holding mechanisms so as to cause rotational slipping of the substrate relative to said substrate holding mechanisms; and~~

a treatment liquid supply mechanism for supplying a treatment liquid to a desired portion of the substrate held by said substrate holding ~~mechanisms~~~~mechanism~~.

2 (canceled)

3 (currently amended) A substrate processing apparatus comprising:

a substrate holding mechanism for holding a peripheral portion of a substrate;

a base member having said substrate holding mechanism attached thereto, said base member facing at least one surface of the substrate;

a rotatable shaft attached to a central portion of said base member;

a first liquid supply nozzle for selectively supplying a chemical liquid or a first cleaning liquid to the substrate from a first line;

a switching device for switching the chemical liquid and the first cleaning liquid to be supplied to said first nozzle;

a second liquid supply nozzle for supplying a second cleaning liquid to an inner surface of said substrate holding mechanism and an upper surface of said base member from a second line;

a gas supply nozzle for supplying a gas to a space between the substrate and said base member;

a nozzle structure including said first liquid supply nozzle, and said second liquid supply nozzle, ~~and said gas supply nozzle~~, said nozzle structure being disposed within said rotatable shaft; ~~and~~

a first liquid discharge mechanism for discharging a liquid in said first line to a drain without supplying the liquid to the substrate; and

a second liquid discharge mechanism for discharging a liquid in said second line to a drain without supplying the liquid to the substrate.

~~a purge gas supply line for supplying a purge gas to a gap between said rotatable shaft and said nozzle structure.~~

4-7 (canceled)

8 (currently amended) The substrate processing apparatus as recited in claim 1, further comprising a scatter prevention cup disposed outside of a circumference of said substrate holding mechanism so as to encompass~~cover~~ said substrate holding mechanism, said scatter prevention cup being movable in a vertical direction.

9 (currently amended) A substrate processing method comprising:

holding a substrate ~~with~~by a substrate holding mechanism ~~with~~under a holding force which is ~~produced~~due to a centrifugal force caused by rotation of the substrate holding mechanism by a substrate rotation mechanism, thereby rotating the substrate;

~~rotating the substrate holding mechanism by a substrate rotation mechanism to rotate the substrate;~~

~~changing a rotational speed of the substrate holding mechanism so as to change the holding force under which the substrate is held by the substrate holding mechanism; and~~

supplying a treatment liquid to a desired portion of the rotating substrate to process the substrate while said changing a rotational speed of the substrate holding mechanism; and-

increasing or decreasing a rotational speed of the substrate holding mechanism so as to cause rotational slipping of the substrate relative to the substrate holding mechanism.

10 (canceled)

11 (currently amended) The substrate processing method as recited in claim 9, further comprising~~wherein said changing a rotational speed of the substrate holding mechanism~~ comprises: stopping said supplying ~~at the substrate~~ treatment liquid simultaneously with or after said increasing or decreasing ~~at the~~ rotational speed of the substrate holding mechanism.

12 (currently amended) The substrate processing method as recited in claim 9, wherein said increasing or decreasing~~changing~~ a rotational speed of the substrate holding mechanism comprises:

increasing or decreasing~~changing~~ the rotational speed of the substrate holding mechanism from a first rotational speed to a second rotational speed; and then

returning the rotational speed of the substrate holding mechanism from the second rotational speed to the first rotational speed.

13-20 (canceled)

21 (currently amended) The substrate processing method as recited in claim 9, wherein said supplying at the treatment liquid comprises supplying the treatment liquid to a peripheral portion of the substrate to remove a film formed on the peripheral portion of the substrate.

22 (original) The substrate processing method as recited in claim 21, wherein the film to be removed comprises a film containing one of Cu, Co, Co alloy, Ta, Ta-N, W, W-N, Ti, Ti-N, Ni, Ru, P, B, and Mo, or a film having a plurality of layers each containing one of Cu, Co, Co alloy, Ta, Ta-N, W, W-N, Ti, Ti-N, Ni, Ru, P, B, and Mo.

23-29 (canceled)

30 (currently amended) The substrate processing apparatus as recited in claim 3, further comprising a scatter prevention cup disposed outside of a circumference of said substrate holding mechanism so as to encompass ~~cover~~ said substrate holding mechanism, said scatter prevention cup being movable in a vertical direction.

31-35 (canceled)

36 (new) The substrate apparatus as recited in claim 3, further comprising a gas supply nozzle for supplying gas to a space between the substrate and said base member.

37 (new) The substrate processing apparatus as recited in claim 3, further comprising a purge gas supply line for supplying a purge gas to a gap between said rotatable shaft and said nozzle structure.